

CLAIMS

WHAT IS CLAIMED:

1. A method, comprising:

5 transmitting a signal having an AC component to a subscriber line;

receiving at least a portion of the transmitted signal from the subscriber line;

determining at least a portion of a period of the AC component of the received signal; and

performing a function of a line card in response to determining at least the portion of the

period of the AC component.

2. The method of claim 1, wherein the signal is a ringing signal and wherein

50 performing the function includes performing ring-trip detection.

3. The method of claim 1, wherein the signal is a fault detection signal and wherein

55 performing the function includes performing AC-fault detection.

4. The method of claim 1, wherein determining at least the portion of the period

includes determining at least one zero crossing of the AC component.

20 5. A method, comprising:

transmitting a signal having at least one of an AC component and a DC component to a  
subscriber line;

receiving at least a portion of the transmitted signal from the subscriber line;

filtering the DC component from the received signal;  
determining a value proportional to a power of the AC component of the received signal over at least a portion of a period of the AC component; and  
performing a function of a line card in response to determining the value proportional to the power of the AC component.

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6. The method of claim 5, wherein determining the value proportional to the power of the AC component includes:

determining at least a portion of a period of the AC component; and  
calculating a squared value of the AC component for at least the portion of the period.

7. The method of claim 6, wherein determining at least a portion of a period includes determining at least the portion of the period using zero crossing.

8. The method of claim 6, wherein the squared value of the AC component is calculated until the squared value is at least equal to a threshold value.

9. The method of claim 5, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.

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10. The method of claim 5, wherein the signal is a fault detection signal and wherein performing the function includes performing AC-fault detection.

11. An apparatus, comprising:

circuitry capable of:

transmitting a signal having an AC component to a subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;

5 computation logic capable of determining at least a portion of a period of the AC component of the received signal; and

logic capable of performing a function of a line card in response to determining at least the portion of the period of the AC component.

10 12. The apparatus of claim 11, wherein the signal is a ringing signal and wherein the logic capable of performing the function includes the logic capable of performing ring-trip detection.

15 13. The apparatus of claim 11, wherein the signal is a fault detection signal and wherein the logic capable of performing the function includes the logic capable of performing AC-fault detection.

20 14. The apparatus of claim 11, wherein computation logic capable of determining at least a portion of a period includes the computation logic capable of determining at least one zero crossing of the AC component.

15. An apparatus, comprising:

circuitry capable of:

transmitting a signal having at least one of an AC component and a DC component to a subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;  
a filter capable of filtering the DC component from the received signal;  
computation logic capable of determining a value proportional to a power of the AC component of the received signal over at least a portion of a period of the AC component; and

logic capable of performing a function of a line card in response to determining the value proportional to the power of the AC component.

16. The apparatus of claim 15, wherein the computation logic capable of determining the value proportional to the power of the AC component includes the computation logic capable of:

determining at least a portion of a period of the AC component; and  
calculating a squared value of the AC component for at least the portion of the period.

17. The apparatus of claim 15, wherein the squared value is computed until it is at least equal to a threshold value.

18. The apparatus of claim 16, wherein determining at least the portion of the period includes determining at least the portion of the period using zero crossing.

19. The apparatus of claim 15, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.
20. The apparatus of claim 15, wherein the signal is a fault detection signal and 5 wherein performing the function includes performing AC-fault detection.
21. A line card, comprising:  
a subscriber line interface circuit capable of:  
transmitting a signal having at least one of an AC component and a DC component to a subscriber line; and  
receiving at least a portion of the transmitted signal from the subscriber line;  
a filter capable of filtering the DC component from the received signal;  
computation logic capable of determining a value proportional to a power of the AC component of the received signal over at least a portion of a period of the AC component; and  
logic capable of performing a function of a line card in response to determining the value proportional to the power of the AC component.
22. The line card of claim 21, wherein the subscriber line interface circuit is a voltage 20 subscriber line interface circuit.

23. The line card of claim 21, wherein the computation logic capable of determining the value proportional to the power of the AC component includes the computation logic capable of:

determining at least a portion of a period of the AC component; and

5 calculating a squared value of the AC component for at least the portion of the period.

24. The apparatus of claim 21, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.

25. The apparatus of claim 21, wherein the signal is a fault detection signal and wherein performing the function includes performing AC-fault detection.

26. An apparatus, comprising:

means for transmitting a signal having an AC component to a subscriber line;

means for receiving at least a portion of the transmitted signal from the subscriber line;

means for determining at least a portion of a period of the AC component of the received signal; and

means for performing a function of a line card in response to determining at least the portion of the period of the AC component.